

What is claimed is:

1. An image processing apparatus comprising:
  - an intrablock pixel position judging section for judging pixel position within a block in which pixels constituting image are divided in units of plural pixels;
  - a shifted pixel designating section for designating shifted pixel to be shifted in accordance with the pixel position judged by the intrablock pixel position judging section;
  - a phase calculating section for determining phase quantity of intrablock dot cluster for every block; and
  - a pixel value shift section for carrying out shift from respective pixels within the block to the shifted pixel on the basis of the phase quantity determined by the phase calculating section and, value differences of respective pixels within the block and value of the shifted pixel.
2. An image processing apparatus as set forth in claim 1, the pixel value shift section comprising :
  - a shift operation/reference position selecting section for generating a reference position signal and a shift operation select signal from coordinate of main scanning direction and coordinate of sub scanning direction within the block; and
  - a shift operation section for carrying out shift operation from pixel data and phase quantity supplied to an operation circuit, which is selected by the shift operation select signal.
3. An image processing apparatus as set forth in claim 1, wherein the block is a group of pixels consisting of a predetermined number of pixels arranged in the main scanning direction.
4. An image processing apparatus as set forth in claim 3, wherein the shifted pixel is two pixels or more adjacent within the block.

5. An image processing apparatus as set forth in claim 1, wherein the pixel value shift section comprises:  
shift quantity judging means for determining distribution of shift quantity to the shifted pixel of respective pixels within the block on the basis of the phase quantity, values of respective pixels within the block and value of the shifted pixel; and

a shift operation section for shifting the shift quantity to the shifted pixel.

6. An image processing apparatus as set forth in claim 5, wherein the shift operation section serves to carry out shift operation so as to shift (move), in a distributed manner, pixel quantity of shift pixel with respect to plural different pixels in accordance with the phase quantity.

7. An image processing apparatus as set forth in claim 6, wherein distributing shift (movement) of pixel quantity of shift pixel by the shift operation section is carried out in such a manner that center of gravity position by pixels within block before shift is also maintained after shifting.

8. An image processing apparatus as set forth in claim 1, wherein the shifted pixel position judging section determines shift pixel position in such a manner that shifted pixels are linearly disposed in the main scanning direction or in the sub scanning direction.

9. An image processing apparatus as set forth in claim 1, wherein the shifted pixel position judging section determines shift pixel position in such a manner that shifted pixels are disposed in a distributed manner on line having a predetermined angle with respect to the main scanning direction or the sub scanning direction.

10. An image processing apparatus as set forth in claim 1,  
 wherein the image processing apparatus further  
 comprises a recording device drive signal generating  
 section for generating a recording device drive signal on  
 the basis of output of the pixel value shift section.

11. An image processing apparatus as set forth in claim 9,  
 wherein the image processing apparatus serves to process  
 color image, and

the shifted pixel position judging section determines  
 shift pixel position in such a manner that angles of line  
 on which shifted pixels are disposed in a distributed manner  
 are caused to be different with respect to plural images  
 obtained by carrying out color separation of color image.

12. An image processing system comprising:

an image reading unit for reading image on manuscript;

and

an image processing unit for processing the image  
 which has been read at the image reading unit to output  
 processed data,

wherein the image processing unit comprises:

an intrablock pixel position judging section for  
 judging pixel position within a block in which pixels  
 constituting image are divided in units of plural pixels;

a shifted pixel designating section for designating  
 shifted pixel to be shifted in accordance with the pixel  
 position judged by the intrablock pixel position judging  
 section;

a phase calculating section for determining phase  
 quantity of intrablock dot cluster for every block; and

a pixel value shift section for carrying out shift from  
 respective pixels within the block to the shifted pixel on  
 the basis of the phase quantity determined by the phase  
 calculating section, and value differences of respective  
 pixels within the block and value of the shifted pixel.

13. An image processing system as set forth in claim 12,  
wherein the image processing unit further comprises  
a recording device drive signal generating section for  
generating a recording device drive signal on the basis of  
output of the pixel value shift section.
14. An image processing system as set forth in claim 13,  
which further comprises an image formation unit for  
forming copy image of the manuscript in accordance the  
recording device drive signal.